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(54) **DISPLAY DEVICE FOR BEVERAGE
PITCHER OR COFFEE MACHINE**

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G01K 1/14 (2006.01)

(52) **U.S. Cl.** **99/285**; 99/323.3; 116/201;
116/279; 116/202; 116/307; 116/DIG. 1

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99/323.3; 116/201, 202, 205, 279, 306, 307,
116/308, DIG. 1, DIG. 3; 368/10, 108; 220/592.16,
220/592.2, 592.28; 40/442, 444, 445; D7/322,
D7/397, 398, 393

See application file for complete search history.

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(57) **ABSTRACT**

An apparatus is disclosed comprising a display device or indicator device and a timer circuit. The display device can be placed in a first or a second state. In the first state the display device provides a first visual indication of a first type of beverage which is within a beverage receptacle. In the second state the display device provides a second visual indication of a second type of beverage which is within the beverage pitcher. The timer circuit, automatically, after a certain period of time, may change the indicator device from the first or second state to a third state in which the indicator device does not provide a visual indication of the type of beverage within a beverage container.

16 Claims, 5 Drawing Sheets

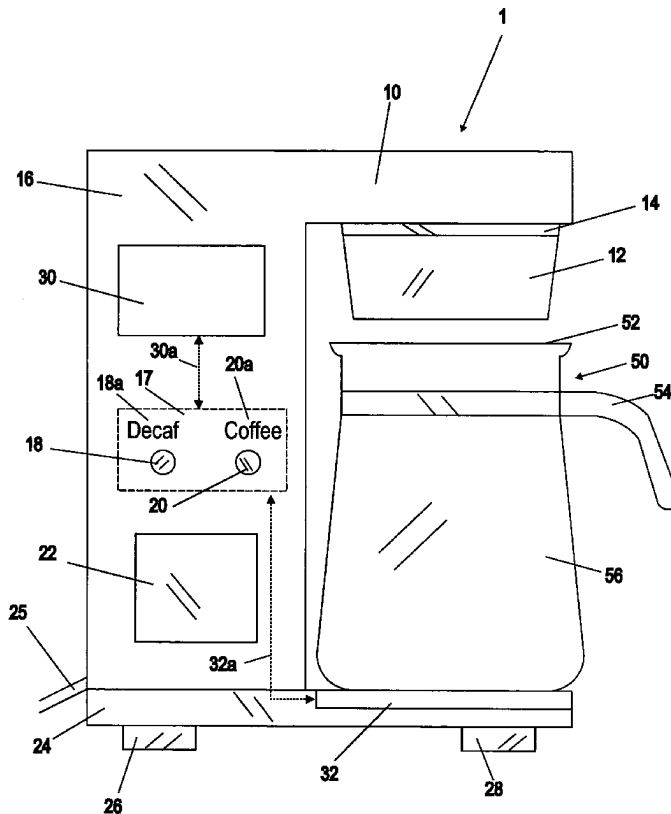


Fig. 1

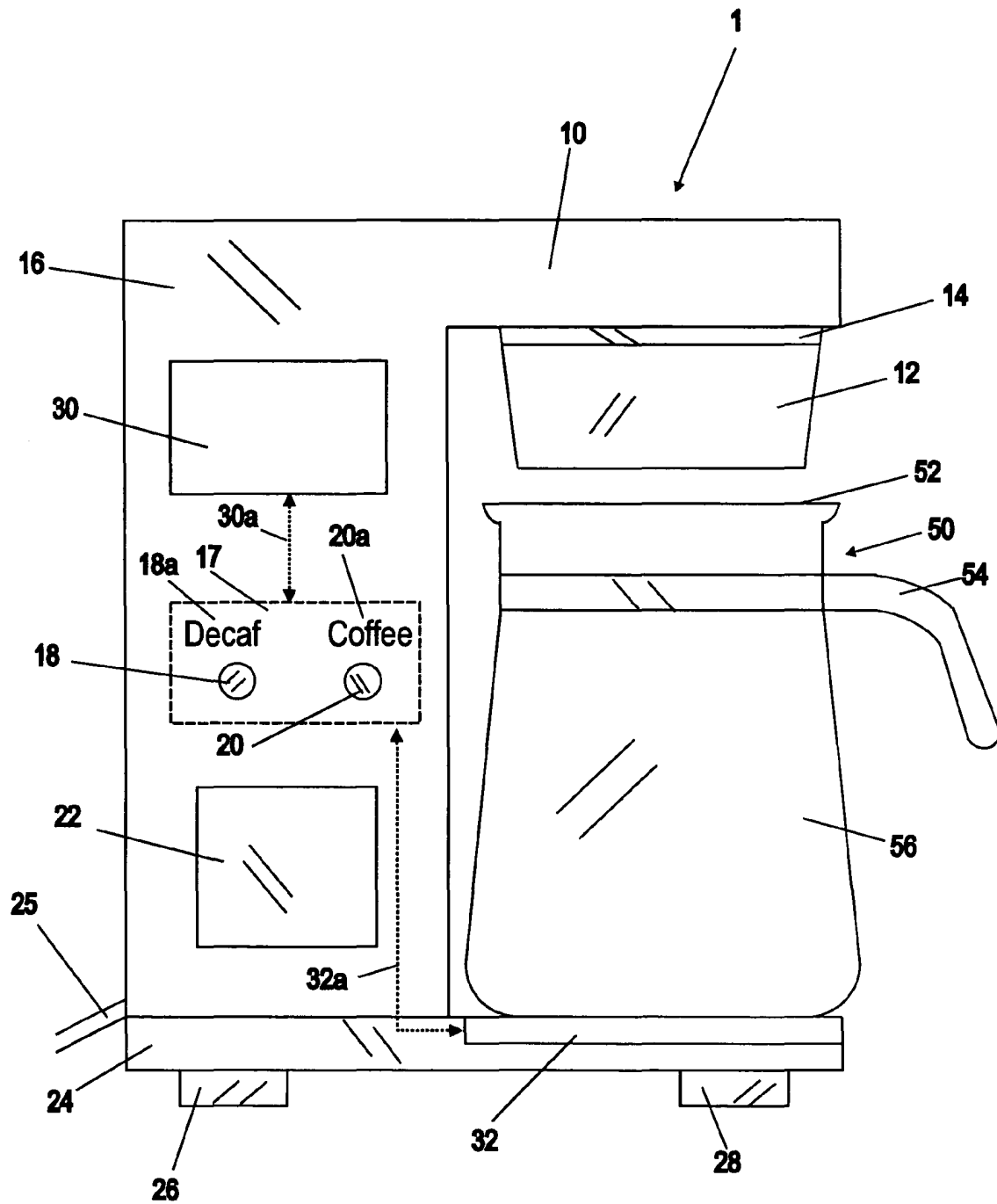


Fig. 2

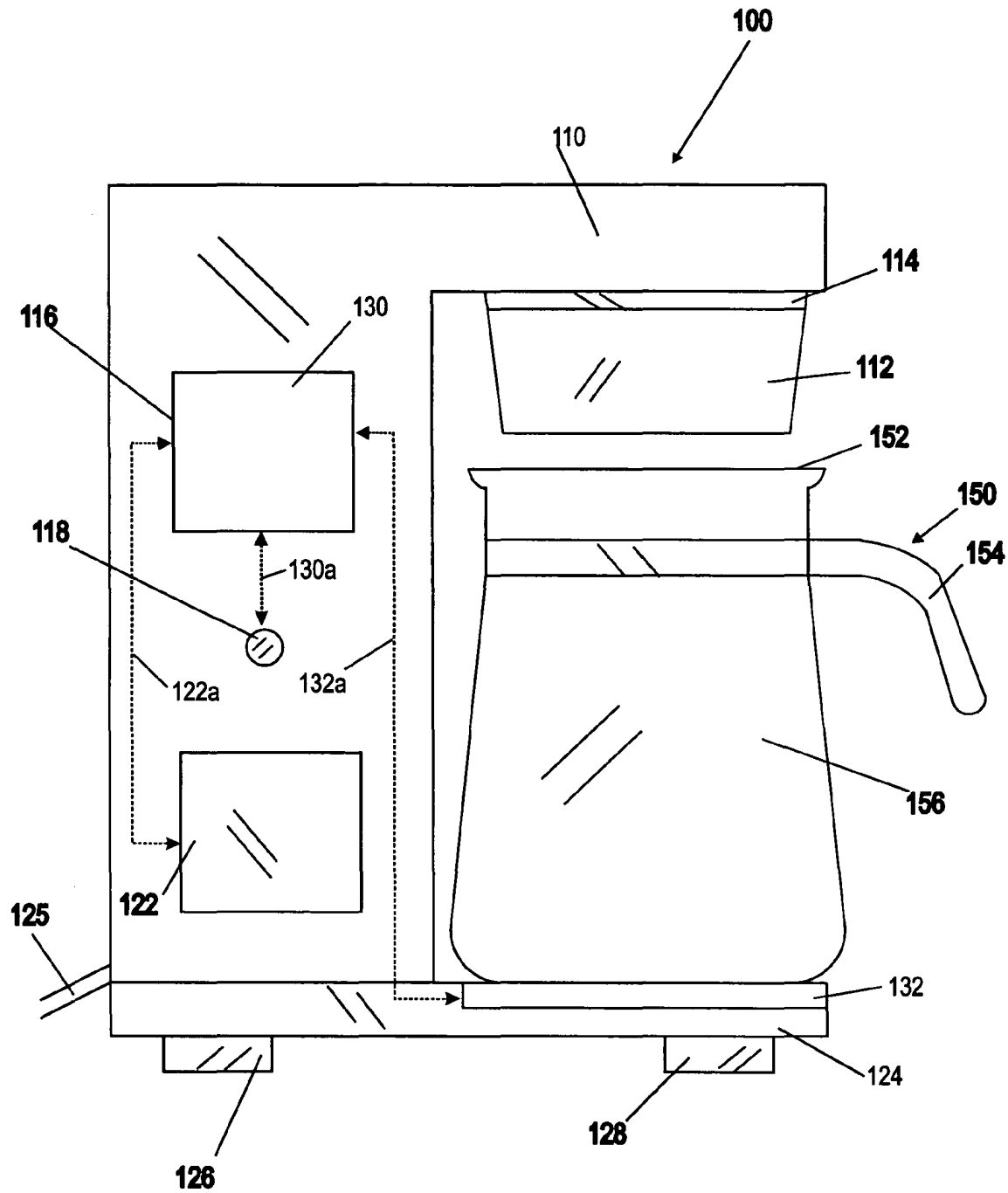


Fig. 3

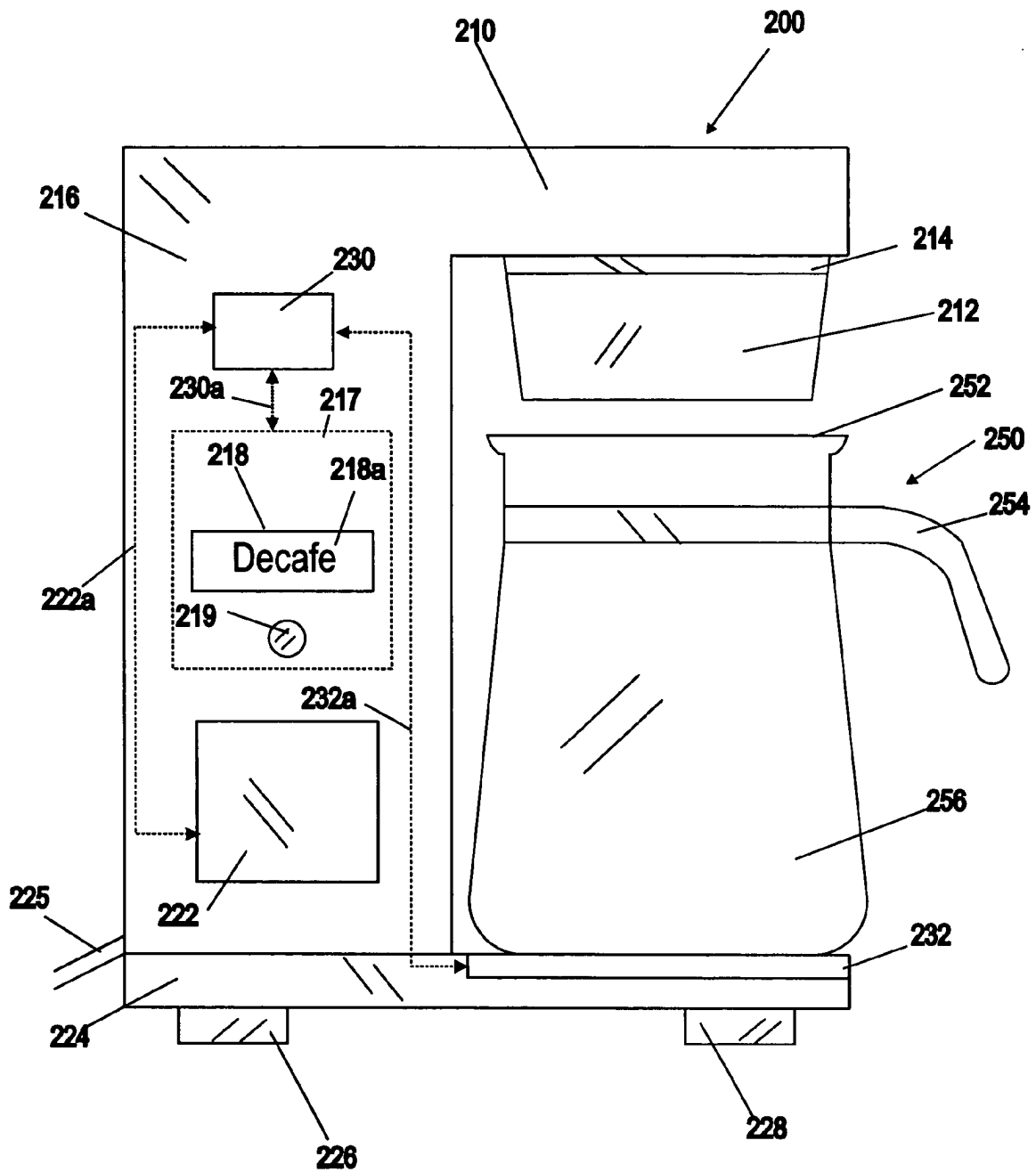
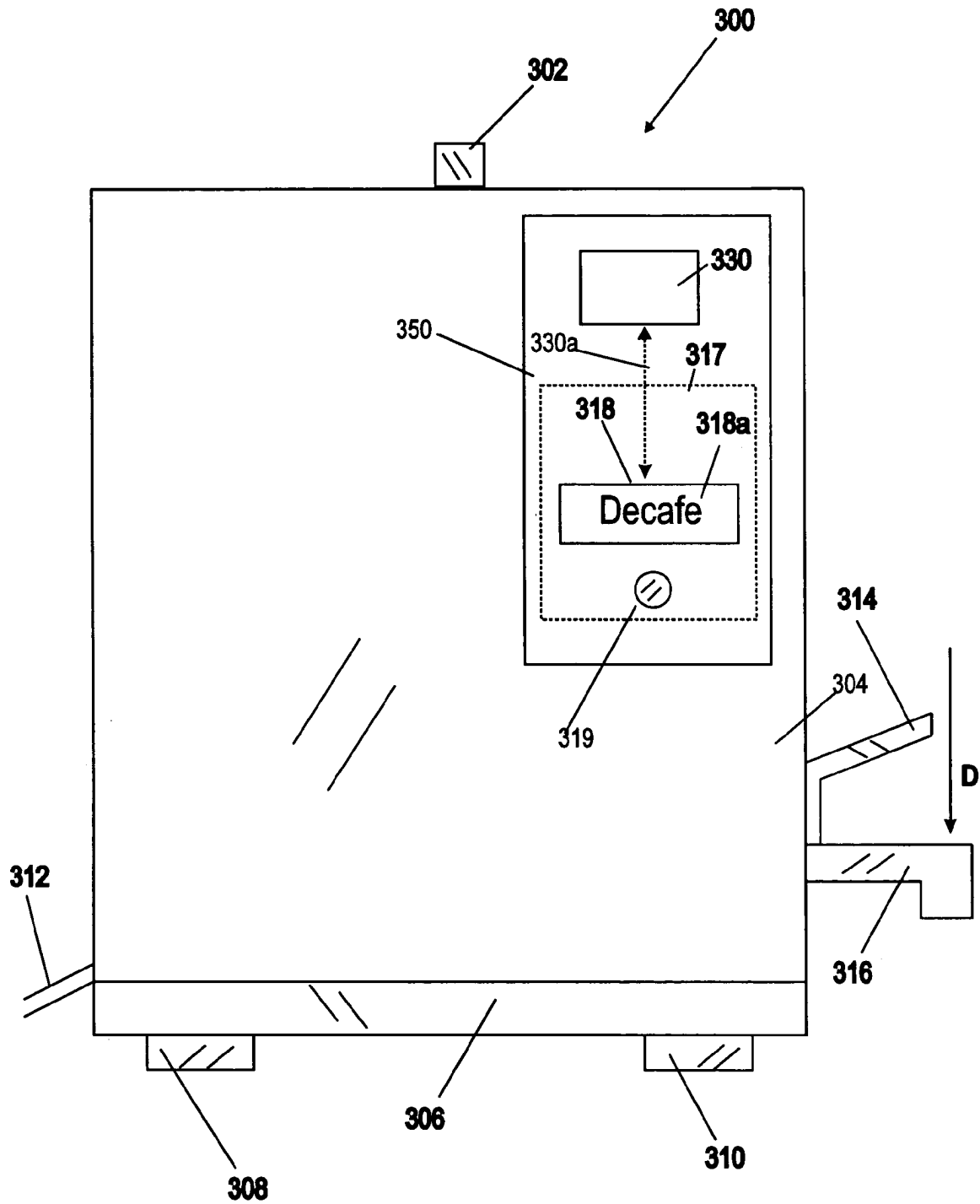


Fig. 4



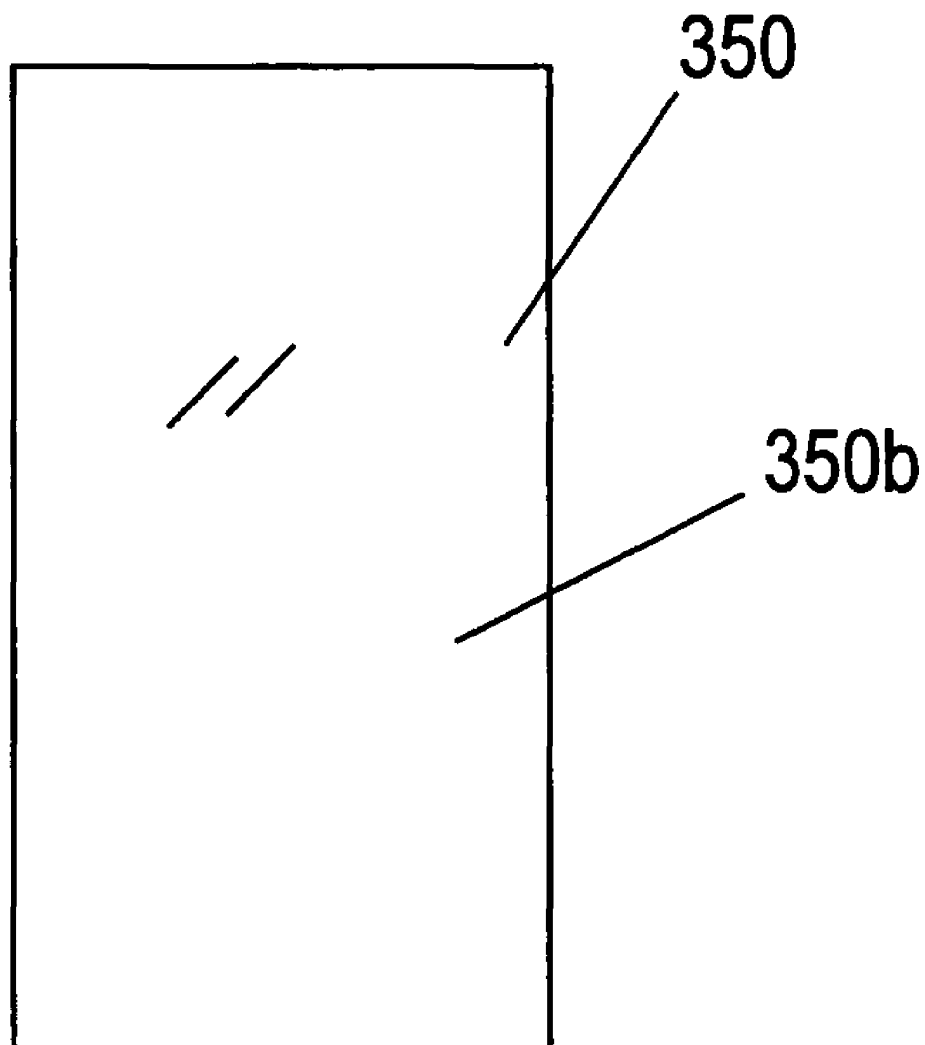
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Fig. 5



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**DISPLAY DEVICE FOR BEVERAGE
PITCHER OR COFFEE MACHINE****FIELD OF THE INVENTION**

This invention relates to improved methods and apparatus concerning providing signs or symbols to indicate the contents of beverage pitchers.

BACKGROUND OF THE INVENTION

U.S. Pat. No. 6,564,696 to Koncelik discloses an indicator device which provides an indication of whether coffee which has been prepared is decaffeinated or non-decaffeinated. After an operator has set the indicator device to, for example, "decaffe", the indicator device remains in a state which indicates "decaffe" until the indicator device is changed by an individual.

SUMMARY OF THE INVENTION

The present invention in one or more embodiments provides an apparatus comprising a timer circuit, and an indicator or display device which communicates with the timer circuit. The indicator device can be placed in a first or second state by an operator. In the first state the indicator device provides a first visual indication of a first type of beverage within a beverage receptacle. In the second state the indicator device provides a second visual indication of a second type of beverage within the beverage receptacle, wherein the second type of beverage differs from the first type of beverage.

The timer circuit can be programmed to automatically change the indicator device after a certain period of time, from the first or second state to a third state, wherein in the third state, the indicator device no longer provides a visual indication of what type of beverage is within the beverage receptacle. The beverage receptacle may be a coffee pot or a coffee machine. The first type of beverage may be non-decaffeinated coffee, and the second type of beverage may be decaffeinated coffee. The timer circuit and the indicator device can be attached or detached from a coffee machine.

The first visual indication may be a designation of the first type of beverage and may be comprised of least one alphanumeric character. The second visual indication may be a designation of the second type of beverage and may be comprised of at least one alphanumeric character.

The indicator device may be comprised of a first light under a first designation which indicates decaffeinated coffee, and a second light under a second designation which indicates non decaffeinated coffee. The first light may be part of a first push button which can be pushed in to light the first light to indicate that decaffeinated coffee has been made. The second light may be part of a second push button which can be pushed in to light the second light to indicate that non decaffeinated coffee has been made. The indicator device may be comprised of a first light which is able to emit either a first or a second color light. The first light may emit the first color light when the coffee machine has made decaffeinated coffee and the first light may emit the second color light when the coffee machine has made non decaffeinated coffee.

The indicator device may include an electronic digital display which displays whether coffee which has been made by a coffee machine is non decaffeinated or decaffeinated. The indicator device may further include a first push button which when pushed in causes the electronic digital display

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to toggle from displaying an indication that the coffee is decaffeinated to displaying an indication that the coffee is non decaffeinated.

A method is also provided comprising fixing an indicator device and a timer circuit on a coffee machine, wherein the indicator device can be placed into a first state or a second state by an operator. When the indicator device is placed in a first state, the indicator device provides a first visual indication of a first type of beverage which is within a coffee receptacle. When the indicator device is placed in a second state the indicator device provides a second visual indication of a second type of beverage which is within the coffee receptacle. The timer circuit, after a certain period of time, may cause the indicator device to automatically change from the first or second state to a third state in which the indicator device does not indicate what type of beverage is within the coffee receptacle.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a coffee machine in accordance with an embodiment of the present invention including an indicator or display device showing a light under a designation to indicate whether coffee which has been prepared in a coffee pot is regular or decaffeinated;

FIG. 2 shows a coffee machine in accordance with another embodiment of the present invention including an indicator or display device showing only a light, which may be one of two colors, to indicate whether coffee which has been prepared in a coffee pot is regular or decaffeinated;

FIG. 3 shows a coffee machine in accordance with another embodiment of the present invention having an indicator or display device which includes a push button and an electronic digital display to indicate whether coffee which has been prepared in a coffee pot is regular or decaffeinated and a coffee pot;

FIG. 4 shows a commercial electric coffee machine including a spigot in accordance with another embodiment of the present invention having an indicator or display device to indicate whether coffee which has been prepared is regular or decaffeinated; and

FIG. 5 shows a backing of the display device of FIG. 4.

DETAILED DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a coffee machine 1 in accordance with an embodiment of the present invention including an indicator device 17. The coffee machine 1 includes an extension 10, portions 12, 14, 16, indicator device 18, control panel 22, power cord 25 (shown partially) which may be electrically connected to a power outlet, base 24, and legs 26 and 28. The coffee machine 1 may be similar to or identical to known available coffee machines, such as "Mr. Coffee" (Trademarked) except for some additional components which will be described. FIG. 1 also shows a coffee pot 50 having an opening 52 for receiving coffee from the coffee machine 1, a handle 54 and a receptacle 56 in which the coffee is stored.

The indicator device 17 includes push button lights 18 and 20 which are under designation "Decaf" 18a and "Coffee" 20a respectively. The push button lights 18 and 20 are both toggle switches and as such if they are turned off, they will light up when pushed, and if they are turned on, they will turn off when pushed in.

If an individual has made decaffeinated coffee in the coffee pot 50 they may cause the push button light 18 to light and cause the push button light 20 to stay off. Thus light 18

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is lit under designation **18a** for “Decaf”. If an individual has made regular coffee in the coffee pot **50** they may cause the push button light **20** to turn off and cause the push button light **18** to stay on. Thus light **20** is lit under designation **18a** for “Coffee”. In this way, any person who wants to have a cup of coffee from the coffee pot **50** will know whether it is coffee (i.e. regular non-decaffeinated coffee) or decaffeinated coffee.

The push button lights **18** and **20** will also turn off when turned off by a timer circuit **30**. The timer circuit **30** is electrically connected to the indicator device **17** by bus **30a**. The timer circuit **30** may also be electrically connected to a hot plate device **32**. The hot plate device **32** may provide a signal to the timer circuit **30** when the hot plate device **32** is not longer heating the coffee pot **50**. In response to such a signal the timer circuit **30** may send a signal via bus **30a** to turn off both lights **18** and **20**, if they are on. When the decaffeinated push button light **18** is pushed the light **18** goes on. In addition, a signal may be sent to the timer circuit **30** starting a timer, such as a one hour timer. After an hour, the timer circuit **30** may send a signal via bus **30a** to the indicator device **17** which will turn off the light **18**.

FIG. **2** shows a coffee machine **100** in accordance with another embodiment of the present invention including an indicator device **118** which is only a light in this example and which may emit one of two colors, to indicate whether coffee which has been prepared in a coffee pot **150** is regular or decaffeinated. The coffee machine **100** may be similar to coffee machine **1** except to the difference between indicator device **17** and indicator device **118**, and other differences which will be described. Coffee machine **100** includes an extension **110**, portions **112**, **114**, **116**, indicator device **118**, control panel **122**, power cord **125** (shown partially) which may be electrically connected to a power outlet, base **124**, and legs **126** and **128**. FIG. **2** also shows a coffee pot **150** having an opening **152** for receiving coffee from the coffee machine **100**, a handle **154** and a receptacle **156** in which the coffee is stored.

The indicator device **118** is a push button single light which can be toggled to emit either a green color light, a red color light, or to emit no light at all, i.e. be turned off. An individual can use, for example, green to indicate that Decaffeinated coffee has been made in coffee pot **150** and red to indicate that regular coffee has been made in coffee pot **150**.

The coffee machine also includes a timer circuit **130** and a hot plate **132**. The timer circuit **130** is electrically connected to the indicator device **118** via bus **130a**. The timer circuit **130** is also electrically connected to the hot plate **132** via bus **132a**.

In operation, after an individual pushes the push button **118** to, for example, light a green color, the timer circuit **130** may be sent a signal from the button **118** to cause, for example, a one hour timer to start. After the one hour timer expires, the timer circuit **130** may send a signal to the button **118**, via bus **130a**, which will cause the button to go dark, i.e. be turned off.

The timer circuit **130** may also receive a signal from the hot plate **132**, indicating that the hot plate **132** has turned off. The timer circuit **130** in response to the hot plate **132** turning off, may send a signal to the button **118**, to turn the light of the button **118** off.

FIG. **3** shows a coffee machine **200** in accordance with another embodiment of the present invention having an indicator device **217** which includes a push button **219** and a electronic digital display **218** to indicate whether coffee which has been prepared in a coffee pot **250** is regular or

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decaffeinated. The coffee machine **200** may be identical to coffee machine **100** except for the difference between indicator device **118** and the indicator device **217**. Coffee machine **200** includes an extension **210**, portions **212**, **214**, **216**, indicator device **217**, control panel **222**, power cord **225** (shown partially) which may be electrically connected to a power outlet, base **224**, and legs **226** and **228**. FIG. **3** also shows a coffee pot **250** having an opening **252** for receiving coffee from the coffee machine **200**, a handle **254** and a receptacle **256** in which the coffee is stored.

An individual can set the electronic digital display **218** to a “Decaf” **218a** designation as in FIG. **3** by pressing the push button **219** a certain number of times. When the push button **219** is next pressed the designation on the digital display **218** may turn to a “Coffee” designation. The push button **219** may be a toggle switch which toggles the “Decaf” and “Coffee” designations on the display **218**.

The coffee machine **200** may also include a timing circuit **230** which may be electrically connected to the indicator device **217** by a bus **230a**. The coffee machine **200** may also include a hot plate **232** which may be electrically connected to the timing circuit **230** by bus **232a**.

In operation, after an individual pushes the push button **219** to, for example, cause the word “Decaf” to appear on the display **218**, the timer circuit **230** may be sent a signal from the button **219** and/or indicator device **217** to cause, for example, a one hour timer to start. After the one hour timer expires, the timer circuit **230** may send a signal to the digital display **218**, via bus **230a**, which may cause the digital display **218** to go dark, to show a blank screen, or to indicate in some other way that the time has expired and that type of coffee can either no longer be determined or the indication of the type of coffee must be verified or updated.

The timer circuit **230** may also receive a signal from the hot plate **232**, indicating that the hot plate **232** has been turned off. The hot plate **232** may be used to heat coffee pot **250**. The timer circuit **230** in response to the hot plate **232** turning off, may send a signal to the digital display **218** via bus **232a** to turn the digital display **218** to go dark, to show a blank screen, or to indicate in some other way that the time has expired and that the type of coffee can either no longer be determined or the indication of the type of coffee must be verified or updated.

FIG. **4** shows a commercial electric coffee machine **300** in accordance with another embodiment of the present invention. The machine **300** includes receptacle **304**, spigot switch **314**, spigot **316**, power cord **312** for connecting to an electrical outlet, base **306**, legs **308** and **310**, and display device or indicator device **350**. The display device or indicator device **350** may be detachable from the rest of coffee machine **300**. The display device or indicator device **350** may include a digital display **318** and a button **319**. The display device **350** may further include a timer circuit **330** electrically connected to the digital display **318** by a bus **330a**. The display device **350** may function similar to the device **217** and timer circuit **230** shown in FIG. **3**. Instead of the display device **350**, the timer circuit **30** and device **17** can be used or the timer circuit **130** and the button **118** can be used.

The spigot switch **314**, when pressed downwards in a direction **D**, allows coffee to flow from the receptacle **304** through the spigot **316** and out of the coffee machine **300**. The machine **300** may be similar to those known in the art with the exception of indicator device **350**. The indicator device **350** may be provided or sold separately. The indicator device **350** may include an adhesive backing for attaching or detaching the indicator device **350** to or from the machine

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300. The indicator device 350 may include a “Decafe” designation 318a which is shown and a “coffee” designation which is not shown. The indicator device 350 can be fixed to the receptacle 304 and part of the machine 300.

FIG. 10 shows a backside 350b of the display device 350 of FIG. 4. The backside is made of an adhesive material which can stick to, for example, machine 300 in FIG. 4, to temporarily attach the device 350 to machine 300.

The timer circuit 30 and/or device 17 of FIG. 1, timer circuit 130 and/or button 118 of FIG. 2, or the timer circuit 230 and/or device 317 of FIG. 3, could take the place of, a warmer light on an automatic coffee pot. Thus, when the person making the coffee pushes a button that says “coffee” two things would happen—the warmer plate, such as warmer or hot plate 32 of FIG. 1 would go on, and a light, such as light 20 would go on lighting up the words, “Coffee” or providing a light under the word “Coffee”. The timer circuits 30, 130, and 230 can be programmed through control panel 22, 122, and 222, via busses 22a, 122a, and 222a, respectively, to cause the devices 17, 118, and 317, respectively, to go out after a set time—a time that can be programmed in by the user. The control panels 22, 122, and 222 may include a keypad for data entry. The timer circuits 30, 130, and 230 can also be programmed to cause the devices 17, 118, and 317, respectively to go off when the warmer or hot plates 32, 132, and 232, respectively, go off.

By having the selection display go out after a certain amount of time, the coffee user will always be assured that each time a new pot is made, the maker would have had to affirmatively select either decafe or Coffee or perhaps decafe/coffee mix if that is what is contained in the pot.

Although the invention has been described by reference to particular illustrative embodiments thereof, many changes and modifications of the invention may become apparent to those skilled in the art without departing from the spirit and scope of the invention. It is therefore intended to include within this patent all such changes and modifications as may reasonably and properly be included within the scope of the present invention’s contribution to the art.

I claim:

1. An apparatus comprising
 - a timer circuit; and
 - an indicator device which communicates with the timer circuit;
 wherein the indicator device can be placed in a first or second state by an operator;
 - wherein in the first state the indicator device provides a first visual indication of a first type of beverage within a beverage receptacle;
 - wherein in the second state the indicator device provides a second visual indication of a second type of beverage within the beverage receptacle, wherein the second type of beverage differs from the first type of beverage;
 - and wherein the timer circuit can be programmed to automatically change the indicator device after a certain period of time from the first or second state to a third state, wherein in the third state, the indicator device no longer provides a visual indication of what type of beverage is within the beverage receptacle.
2. The apparatus of claim 1 wherein the first type of beverage is non-decaffeinated coffee; and the second type of beverage is decaffeinated coffee.
3. The apparatus of claim 2 wherein the timer circuit and the indicator device can be attached or detached from a coffee machine.

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4. The apparatus of claim 1 wherein the first visual indication is a designation of the first type of beverage and is comprised of least one alphanumeric character; and

the second visual indication is a designation of the second type of beverage and is comprised of at least one alphanumeric character.

5. The apparatus of claim 1 wherein the beverage receptacle is a coffee pot.

6. The apparatus of claim 5 wherein the first type of beverage is decaffeinated coffee; and the second type of beverage is non decaffeinated coffee.

7. The apparatus of claim 2 wherein the indicator device comprises

- a first light under a first designation which indicates decaffeinated coffee; and
- a second light under a second designation which indicates non decaffeinated coffee.

8. The apparatus of claim 7 wherein the first light is part of a first push button which can be pushed in to light the first light to indicate that decaffeinated coffee has been made; and the second light is part of a second push button which can be pushed in to light the second light to indicate that non decaffeinated coffee has been made.

9. The apparatus of claim 2 wherein the indicator device comprises

- a first light which is able to emit either a first or a second color light;
- and wherein the first light emits the first color light when the coffee machine has made decaffeinated coffee and the first light emits the second color light when the coffee machine has made non decaffeinated coffee.

10. The apparatus of claim 9 wherein the first light is part of a first push button which can be pushed in to light the first light and to toggle the first light from emitting a first color light to emitting a second color light.

11. The apparatus of claim 2 wherein the indicator device includes an electronic digital display which displays whether coffee which has been made by the coffee machine is non decaffeinated or decaffeinated.

12. The apparatus of claim 11 wherein the indicator device includes a first push button which when pushed in causes the electronic digital display to toggle from displaying an indication that the coffee is decaffeinated to displaying an indication that the coffee is non decaffeinated.

13. The apparatus of claim 2 further comprising the coffee machine which includes a spigot through which coffee can flow; and wherein the coffee machine includes a spigot switch for allowing coffee to flow from the coffee machine through the spigot.

14. A method comprising the steps of fixing an indicator device and a timer circuit on a coffee machine;

wherein the indicator device can be placed into a first state or a second state by an operator;

wherein when the indicator device is placed in a first state the indicator device provides a first visual indication of a first type of beverage which is within a coffee receptacle;

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wherein when the display device is placed in a second state the indicator device provides a second visual indication of a second type of beverage which is within the coffee receptable; and

wherein the first and second type of beverages differ and the first and second visual indications differ; 5

and wherein the timer circuit, after a certain period of time, causes the indicator device to automatically change from the first or second state to a third state in which the indicator device does not indicate what type 10 of beverage is within the coffee receptacle.

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15. The method of claim **14** wherein the first type of beverage is decaffeinated coffee; and the second type of beverage is non decaffeinated coffee.

16. The method of claim **14** wherein the first visual indication is a designation of the first type of beverage and is comprised of least one alphanumeric character; and

the second visual indication is a designation of the second type of beverage and is comprised of at least one alphanumeric character.

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